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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,413	07/03/2003	Motoyasu Nakamura	N45-159950M/ARK	3618
7055	7590	06/20/2005	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			CARPIO, IVAN HERNAN	
			ART UNIT	PAPER NUMBER
			2841	

DATE MAILED: 06/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/612,413

Applicant(s)

NAKAMURA, MOTOYASU

Examiner

Ivan H. Carpio

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-5 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9-30-03</u> | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis (US Patent 6377445) in view of Takahashi (US Patent 4604776).

With respect to claim 1, Davis teaches a support structure (figures 3 or 5, element 104) for a control board (figure 2 or 3, element 118) comprising: a control board (figures 2 or 3, element 118) including a plurality of attaching holes (figures 2 or 3, element 120) disposed at respective corners of an imaginary polygon (figure 2, note that many different polygons can be formed using holes 120 as the respective corners), a support member (figures 3 or 5, element 104) for supporting the control board, and a plurality of support bosses (figure 2-5, element 110) disposed on the support member in correspondence with the respective attaching holes (figure 3), a plurality of support bosses each having a support portion (figure 4 or 5, element 136) in contact with one face of the control board, and an engaging portion (figure 4, element 154) inserted into the attaching hole and engaged with the other face of the control board, wherein each of the engaging portions is formed with a split groove (figure 4, element 154) in a shape

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of a straight line opened at a front end thereof and that the support bosses are provided at the support member by avoiding the split grooves of the support bosses disposed at two ends of straight lines connecting the corners of the imaginary polygon from being disposed on the same straight lines (Fig. 2, note the support boss at the far left corner and the two support bosses on either side form an imaginary triangle, drawing straight lines from any of these split grooves it can be noticed that two split grooves are never disposed on the same straight line) . Davis does not teach that the support member is made of synthetic resin. Takahashi teaches a support structure made of synthetic resin (column 5 lines 3-7). It would have been obvious to one of ordinary skill in the art at the time of the invention to make the support member, taught by Davis, out of synthetic resin because of its properties of high rigidity, simple construction and low cost (Takahashi, column 5 lines 3-7).

With respect to claim 3 and with all the limitations of claim 1, Davis teaches that the imaginary polygon is a quadrangle (fig. 2, note the four support bosses at the corners of the board 118), four of the support bosses are provide on the support member in attitudes of avoiding the split grooves of pairs of the support bosses disposed at two ends of straight lines connecting the respective corners of the imaginary quadrangle from being disposed on the same straight line (fig. 2 note that drawing straight lines form any of these four support bosses it can be noticed that two split grooves are never disposed on the same straight line).

With respect to claim 4 and with all the limitations of claim 1, Davis teaches that the imaginary polygon is a triangle (fig. 2, note the support boss at the far left corner

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and the two support bosses on either side form an imaginary triangle), three of the support bosses are provide on the support member in attitudes of avoiding the split grooves of pairs of the support bosses disposed at two ends of straight lines connecting the respective corners of the imaginary triangle from being disposed on the same straight line (fig. 2 note that drawing straight lines form any of these three support bosses it can be noticed that two split grooves are never disposed on the same straight line).

With respect to claim 5 and with all the limitations of claim 1, Davis teaches that the imaginary polygon is a pentagon (fig. 2, note the support bosses in any two adjacent corners and the support bosses directly in front of them (forming an imaginary rectangle) along with the support boss in front and in between these support bosses forms an imaginary pentagon), five of the support bosses are provide on the support member in attitudes of avoiding the split grooves of pairs of the support bosses disposed at two ends of straight lines connecting the respective corners of the imaginary pentagon from being disposed on the same straight line (fig. 2 note that drawing straight lines form any of these five support bosses it can be noticed that two split grooves are never disposed on the same straight line).

### ***Allowable Subject Matter***

Claim 2 contains allowable subject matter as pertained to the orientation of the split grooves of the support bosses on the support member. While a significant amount of prior art exists on support structures and more specifically support bosses used to

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support control boards (US Patents 6418028, 3836704, 5963432) none of the prior art discloses that the support bosses are oriented as follows: The support bosses are located at corners of an imaginary quadrangle, when notations P1, P2, P3 and P4 are attached at positions of the respective corners of the imaginary quadrangle on the control board successively the support boss peripheral direction, at the corner position P1 is provided on the support member in an attitude by which the split groove is made to be orthogonal to a diagonal line connecting the corner positions P1 and P3, the support boss at the corner position P2 is provided on the support member in an attitude by which the split groove is made to be orthogonal to a diagonal line connecting the corner positions P2 and P4, the support boss at the corner position P3 is provided on the support member in an attitude by which the split groove is made to be along a straight line connecting the corner positions P2 and P3 or a straight line connecting the corner positions P3 and P4, and the support boss at the corner position P4 is provided on the support member in an attitude by which the split groove is made to be along a straight line connecting the corner positions P4 and P1 or a straight line connecting the corner positions P3 and P4.

Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 6418028 discloses a similar support structure. US

Patents 3836704, 5963432 and 6390829 disclose support bosses used for circuit boards.

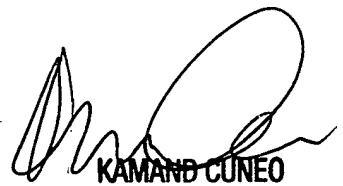
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ivan H. Carpio whose telephone number is 571-272-8396. The examiner can normally be reached on M-R 6:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

IC



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